

REMARKS

Claims 34-58 and 65-103 are pending. Claims 1-33, and 59-64 have been cancelled without prejudice. Claims 34-58, 65, 66, and 70 have been amended; and new claims 71-103 have been added. Claims 67-69 stand withdrawn from further consideration as drawn to non-elected species. Support for the claim amendments and new claims can be found throughout the application, including the originally-filed claims. In particular, support for new claims 71-103 can be found in the specification at Example 1 (page 20) and in Figure 4. Accordingly, no new matter has been added.

Moreover, the claim amendments should in no way be construed to be an acquiescence to any of the rejections. Rather, the amendments to the claims are being made solely to expedite the prosecution of the above-identified application. Consequently, Applicants expressly reserves the option to further prosecute the same or similar claims in the instant or subsequent patent application. 35 USC §§ 120-121.

In accordance with 37 CFR 1.78, the specification has been amended to include a specific reference to an earlier application from which benefits are being claimed.

Rejection of Claims Under 35 U.S.C. § 112, First Paragraph

3. Claims 28 and 60 stand rejected under 35 U.S.C. § 112, first paragraph, over the use of the word “permanent” as applied to a coating comprised of a compound of the invention wherein the compound of the invention is released from the coating. The Applicants respectfully submit that the rejection has been rendered moot in light of the cancellation of claims 28 and 60.

4. Claims 5, 12, 13, 17, 21, 22, 38, 45, 46, 50, 54, and 55 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which, according to the Examiner, was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner contends that there are no examples demonstrating that any compounds within the scope of these claims are anti-fouling compounds, stating “The only compounds for which data of anti-fouling capabilities is presented is zosteric acid, octyl sulfate

and methyl sulfate. Further stating, “None of these three compounds meets the limitations of claims 5, 12, 13, 17, 21, 22, 38, 45, 46, 50, and 54 [, and 55].”

The Applicants respectfully submit that the rejection of claims 5, 12, 13, 17, 21, and 22 has been rendered moot in light of the cancellation of these claims. Regarding claims 38, 45, 46, 50, 54, and 55, the Applicants respectfully disagree with the Examiner’s assertion that because the examples given in the specification (zosteric acid, octyl sulfate and methyl sulfate) do not meet the limitations of claims 38, 45, 46, 50, 54, and 55 that this is proper grounds for a written description rejection of claims 38, 45, 46, 50, 54, and 55 under 35 U.S.C. §112, first paragraph. In *The Regents of the University of California v. Eli Lilly & Co.*, 119 F. 3d 1559, 1562, 43 U.S.P.Q.2d 1398, 1400 (Fed. Cir. 1997), the court establishes that in order to satisfy the written description requirement for generic claims involving chemical materials, the generic formula should indicate with specificity what the generic claims cover so that one skilled in the art can identify many of the species that the claims encompass. This goal may be accomplished by a recitation of a substantial number of structural features common to the members of a genus. The court indicated that written description is analogous to enablement of a genus, wherein recitation of a representative number of species within a genus is sufficient to enable the entire genus. *Id.* at 1569, 43 U.S.P.Q.2d at 1406. Indeed, one can, in principle, support broad claims with even a single disclosed embodiment. See *Spectra-Physics Inc. v. Coherent Inc.*, 827 F.2d 1524, 3 U.S.P.Q.2d 1737 (Fed. Cir. 1987); see also *Utter v. Hirage*, 845 F.2d 993, 998, 6 U.S.P.Q.2d 1709, 1714 (Fed. Cir. 1988) (“A specification may, within the meaning of 35 U.S.C. §112, first paragraph, contain a written description of a broadly-claimed invention without describing all species that claim encompasses”). Moreover, the embodiment need not necessarily have even been reduced to practice. See *In re Wright*, 999 F.2d 1557, 1561, 27 U.S.P.Q.2d 1510, 1513 (Fed. Cir. 1993) (“Nothing more than objective enablement is required, and therefore it is irrelevant whether [a] teaching is provided through broad terminology or illustrative examples”); *In re Robins*, 429 F. 2d 452, 166 U.S.P.Q. 552, 555 (C.C.P.A. 1970) (stating that “representative samples are not required by the statute and are not an end in themselves.”); *In re Long*, 368 F.2d 892, 895, 151 U.S.P.Q. 640, 642 (C.C.P.A. 1966) (holding that the absence of a working example does not in and of itself compel the conclusion that a specification does not satisfy the requirements of section 112.). Against this backdrop of binding precedent, the Applicants

respectfully submit that disclosure of zosteric acid (a substituted aryl compound) and methyl and octyl sulfate (alkyl compounds) conveys to one of ordinary skill in the art of chemistry that the inventors had possession of the invention of claims 38, 45, 46, 50, 54, and 55 (i.e., sulfate compounds of alkylphenyl, heteroalkylphenyl, arylphenyl, or heteroarylphenyls).

5. Claims 1-27, 29-59, 61-66, and 70 stand rejected under 35 U.S.C. § 112, first paragraph, based on the Examiner's contention that the specification, while being enabling for a coating comprising an effective amount of bioavailable anti-fouling compound selected from the group consisting of methyl sulfate, octyl sulfate and zosteric acid, does not reasonably provide enablement for coating comprising an effective amount of bioavailable anti-fouling compounds selected from the other compounds within the scope of general structure 1.

The Applicants respectfully submit that the 112, first paragraph, rejection of claims 1-27, 29-33, 59, and 61-64 has been rendered moot in light of the cancellation of the claims. The Applicants respectfully traverse the 112, first paragraph, rejection of claims 34-58, 65, 66, and 70. For the same reasons as applied above for the written description 35 U.S.C. §112, first paragraph, rejection, the Applicants respectfully submit that disclosure of zosteric acid and octyl and methyl sulfate enables one of ordinary skill in the art of chemistry to prepare all the members of the claimed genus. Namely, the court in *The Regents of the University of California v. Eli Lilly & Co.*, 119 F. 3d at 1569, 43 U.S.P.Q.2d at 1406, indicated that written description is analogous to enablement of a genus, wherein recitation of a representative number of species within a genus is sufficient to enable the entire genus.

The Examiner contends that disclosure of zosteric acid, octyl sulfate and methyl sulfate is not a representative amount and that it would require undue experimentation to determine what compounds and what coating compositions would meet the limitations of the present claims. The Applicants respectfully disagree with this contention. Initially, the Applicants respectfully assert that where a Specification contains considerable direction and guidance, there is a high level of skill in the art at the time the application was filed, and the methods needed to practice the invention are well known in the art, undue experimentation is not required to practice the claimed invention. *In re Wands*, 858 F.2d 731, 740, 8 USPQ2d 1400, 1406 (Fed. Cir. 1988). With respect to the use of the genus of compounds of general structure 1 in the claimed coatings,

the Applicants respectfully contend that the instant application provides considerable direction and guidance because it contains several detailed and distinct examples of the claimed coatings. Further, the Applicants respectfully assert that the level of skill in the relevant arts is high because one of ordinary skill in the relevant arts, e.g., synthetic organic chemistry, has a Ph.D. in the art. Accordingly, the Applicants respectfully assert that that undue experimentation is not required to practice the claimed invention. *See id.* Critically, the Applicants respectfully point out that it is improper for the Examiner to conclude that a disclosure is not enabling based on an analysis of only one of the above factors while ignoring one or more of the others; in other words, the Examiner's analysis must consider all the evidence related to each of the factors, and any conclusion of lack of enablement must be based on the evidence as a whole. MPEP § 2164.01(a).

Furthermore, the Applicants respectfully point out that the *quantity* of experimentation needed to be performed by one skilled in the art is only one factor involved in determining whether undue experimentation is required to make and use the invention. *See In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988) (citing *In re Angstadt*, 537 F.2d 489, 502-04, 190 USPQ 214, 217-19 (CCPA 1976)) (concluding that the test for undue experimentation is not merely quantitative because a considerable amount of experimentation is permissible if it is merely routine or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed). *See also In re Colianni*, 561 F.2d 220, 224, 195 USPQ 150, 153 (CCPA 1977) (stating that extended experimentation may not be undue if the skilled artisan is given sufficient direction or guidance). Moreover, because the time and difficulty of any required experimentation is *not* determinative if it is merely routine experimentation, and methods of testing the effectiveness of the coatings of the present invention are disclosed, the Applicants respectfully assert that undue experimentation would not be required to practice the claimed invention. MPEP § 2164.06.

Accordingly, withdrawal of the rejections under 35 U.S.C. 112, first paragraph, is respectfully requested.

Rejection of Claims Under 35 U.S.C. § 112, Second Paragraph

6. Claims 1-33 stand rejected under 35 U.S.C. § 112, second paragraph, over the use of the phrase "A plant cell surface.." in the preamble of the claims. The Applicants respectfully submit that the rejection has been rendered moot in light of the cancellation of claims 1-33.

Claims 26, 27, 58, and 59 stand rejected under 35 U.S.C. § 112, second paragraph, over confusion as to the difference between the terms “temporary” (claims 26 and 58) and “semi-permanent” (claims 27 and 59). The Applicants respectfully submit that the rejection has been rendered moot in light of the cancellation of claims 26, 27, and 59. The Applicants respectfully assert that the term “semi-permanent” standing alone complies with the requirements of 35 USC 112 ¶2.

Claims 28 and 60 stand rejected under 35 U.S.C. § 112, second paragraph, over the use of the word “permanent” as applied to a coating comprising a compound of the invention wherein the compound of the invention is gradually released from the coating. The Applicants respectfully submit that the rejection has been rendered moot in light of the cancellation of claims 28 and 60.

Claims 29-32 stand rejected under 35 U.S.C. § 112, second paragraph, for the recitation of “a defined period of time,” and in the case of claims 31 and 32 also for lacking a point of reference by which to measure the reduction in the number of pathogens against. The Applicants respectfully submit that the rejection has been rendered moot in light of the cancellation of these claims.

Claims 61-64 stand rejected under 35 U.S.C. § 112, second paragraph, for the recitation of “a defined period of time,” and in the case of claims 63 and 64 also for lacking a point of reference by which to measure the reduction in the number of pathogens against. The Applicants respectfully submit that the rejection has been rendered moot in light of the cancellation of these claims.

Claim 70 stands rejected under 35 U.S.C. § 112, second paragraph, based on the Examiner’s contention that the term “hard” is indefinite because it is relative. To expedite prosecution, the Applicants have amended claim 70 removing the phrase “into a hard coating”. Importantly, this amendment does not reflect a change in the scope of the invention for which protection is sought.

Accordingly, the Applicants respectfully request the withdrawal of the 35 U.S.C. 112, second paragraph, rejection of the claims.

Rejection of Claims Under 35 U.S.C. § 102(a) or (b) or both

8. Claims 1-4, 7-11, 16, 19, 20, 25-27, 29-37, 40-44, 49, 52, 53, 58, 59, 61-66, and 70 stand rejected under 35 U.S.C. §102(b) as being anticipated by Zimmerman et al. (U.S. Patent No. 5,384,176). The applicants respectfully submit that the rejection of claims 1-4, 7-11, 16, 19, 20, 25-27, 29-33, 59, and 61-64 has been rendered moot in light of the cancellation of these claims.

Claims 34-37, 40-44, 49, 52, 53, 58, 65, 66, and 70 have been amended to no longer include -OH as a possible definition of X in general structure 1. Claim element X is now defined as -O(aryl), -O(acyl), -O(sulfonyl), -CN, F, Cl, or Br. Zimmerman et al. discloses only sulfoxy compounds where the equivalent of X is -OH, and not -O(aryl), -O(acyl), -O(sulfonyl), -CN, F, Cl, or Br. Of course, to anticipate a claim, a single source must contain all of the elements of the claim. *See Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F. 2d 1367, 1379, 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986); *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 750 F. 2d 1569, 1574, 224 U.S.P.Q. 409, 411 (Fed. Cir. 1984). Therefore, the Applicants respectfully submit that Zimmerman et al. does not anticipate claims 34-37, 40-44, 49, 52, 53, 58, 65, 66, and 70. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejections under § 102(b) of claims 34-37, 40-44, 49, 52, 53, 58, 65, 66, and 70.

9. Claims 1-4, 6-11, 14-16, 18-20, 23-27, 29-37, 39-44, 47-49, 51-53, 56-59, 61-66 and 70 stand rejected under 35 U.S.C. §102(a) or (b) as being anticipated by the Applicant's specification. The Applicants respectfully submit that the rejection of claims 1-4, 6-11, 14-16, 18-20, 23-27, 29-33, 59, and 61-64 has been rendered moot in light of the cancellation of these claims.

Further, the Applicants respectfully traverse the rejection of claims 34-37, 39-44, 47-49, 51-53, 56-58, 65, 66, and 70. Claims 34-37, 39-44, 47-49, 51-53, 56-58, 65, 66, and 70 have been amended to no longer include -OH as a possible definition of X in general structure 1. Claim element X is now defined as -O(aryl), -O(acyl), -O(sulfonyl), -CN, F, Cl, or Br. Commercially available octyl sulfate and methyl sulfate are not included within the limitations of amended claims 34-37, 39-44, 47-49, 51-53, 56-58, 65, 66, and 70, because the equivalent of X in these two compounds is -OH.

As noted above, to anticipate a claim, a single source must contain all of the elements of the claim. *See Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F. 2d 1367, 1379, 231

U.S.P.Q. 81, 90 (Fed. Cir. 1986); *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 750 F. 2d 1569, 1574, 224 U.S.P.Q. 409, 411 (Fed. Cir. 1984). The Applicants respectfully submit that commercially available octyl sulfate and methyl sulfate do not anticipate amended claims 34-37, 39-44, 47-49, 51-53, 56-58, 65, 66, and 70. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejections under § 102(b) or § 102(a) or both of claims 34-37, 40-44, 49, 52, 53, 58, 65, 66, and 70.

Fees

The Applicants believe they have provided for any required fees in connection with the filing of this paper. Nevertheless, the Director is hereby authorized to charge any additional required fee to our Deposit Account, 06-1448.

Conclusion

In view of the above amendments and remarks, the Applicants believe that the pending claims are in condition for allowance. If a telephone conversation with Applicant's Attorney would expedite prosecution of the application, the Examiner is urged to contact the undersigned.

Respectfully submitted,
FOLEY HOAG LLP



Dana M. Gordon, Ph.D.
Attorney for Applicants
Registration No. 44,719

Patent Group
FOLEY HOAG LLP
155 Seaport Boulevard
Boston, MA 02210

Tel: 617-832-1000
Fax: 617-832-7000

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